

STANDARDS FOR RAPID TRANSIT EXPANSION - N.Y. (CITY) TRANSPORTATION ADMIN.

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Standards for Rapid Transit Expansion

A Report to the Mayor and the New York City Board of Estimate

Standards for Rapid Transit Expansion

NEW YORK CITY
A Report to the Mayor and the New York City Board of Estimate

**Transportation Administration, City Planning Commission, Bureau of the Budget
August 14, 1968**

August 14, 1968

Board of Estimate
City Hall
New York, N. Y. 10007

Gentlemen:

The Board of Estimate on July 25, 1968, referred the transportation submission of the Metropolitan Transportation Authority and the New York City Transit Authority to the Transportation Administration, City Planning Commission, and Bureau of the Budget for their reports.

The heads of these agencies have worked together with members of their staffs to analyze the Metropolitan Transportation Authority and New York City Transit Authority proposals and present their report herewith.

City and State funds now available make possible the first major expansion of the transit system in over thirty years. This transportation expansion program is essential for the continued economic strength and vitality of this great City.

We respectfully urge the Board of Estimate to adopt the recommendations made in this report and to permit the Metropolitan Transportation Authority and the New York City Transit Authority to begin the detailed design of these improvements.

Respectfully submitted,

Constantine Sidamon-Eristoff, Commissioner of Highways,
for the Transportation Administration

Donald H. Elliott, Chairman, City Planning Commission

Frederick O'R. Hayes, Director, Bureau of the Budget

MAJOR CORRIDOR TRANSIT LOADS 1966-85 INBOUND PEAK HOUR

PASSENGERS IN THOUSANDS

Load/Capacity	Overload	Express
Load/Capacity	Reserve	Local



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RECOMMENDED PROGRAM NEW YORK CITY TRANSIT SYSTEM

- Approved
- Additions to Program
- Requires Further Study
- ||||| Disapproved
- Existing Rapid Transit
- ++++ Existing Railroad



Summary

The Transportation Administration, City Planning Commission and Bureau of the Budget are in substantial agreement with the expansion program of the Metropolitan Transportation Authority (MTA) and New York City Transit Authority (NYCTA).

There is, however, no clear assurance from the submission that the proposed new lines will be built to acceptable modern standards of speed, convenience and comfort.

It is essential that all new rapid transit facilities permit average route speeds of at least 30 miles per hour to allow 30-minute access to midtown from outlying stations on the system. Stations should be conveniently located and attractively designed, and utmost possible attention should be given to the comfort of the long-neglected rider.

We would oppose the approval of any detailed plan which does not meet these standards. The cost of construction will exceed presently available monies, but the difference must be made up from Federal funds and other sources.

One of our most serious reservations about the routes outlined in the expansion proposal is the omission from the first phase of the construction program of the essential 48th Street crosstown system in Manhattan. This is the key to an effective passenger distribution system in Manhattan's business district and must be a top priority project.

Also receiving insufficient priority is the elimination of the BMT elevated line which runs through the Jamaica business district. Development of mass transit facilities must be coordinated with the revitalization of this district and the construction of York College.

Although the construction of the Second Avenue Subway is deemed necessary by all agencies involved, it should be a two-track line in a deep-rock tunnel so that its construction will not disrupt this heavily congested avenue.

We approve the following routes with the modifications noted:

- A new Second Avenue Subway (Route 132A) extending from the Harlem River south to a temporary midtown terminus at 34th Street. Design work should be carried out for a southerly continuation to the vicinity of Canal Street.
- A Second Avenue Extension to Dyre Avenue (Route 132B) in the Bronx along the abandoned roadbed of the defunct New York, Westchester and Boston Railroad to provide a high-speed by-pass to growing areas of the outer Bronx.
- A two-track interconnection of the proposed 63rd Street tunnel with the Queens IND line along 41st Avenue and Northern Boulevard plus necessary connections in Manhattan (Route 131A). This line should be connected to Route 131B in the vicinity of Sunnyside Yards.
- A one-track high-speed IND by-pass route on the Long Island Rail Road (LIRR) right-of-way between Queens Plaza and 67th Avenue in Rego Park (Route 131B).
- A two-track line from the vicinity of the IND Woodbaven Station to Kissena Boulevard on the median strip of the Long Island Expressway (Route 131C).
- A two-track line from the vicinity of the IND Van Wyck Boulevard Station to Springfield Boulevard along the rights-of-way of the Van Wyck Expressway, LIRR Mainline and the LIRR Atlantic Branch (Route 131D).
- The proposed LIRR extension to Manhattan's East Side via a new 63rd Street tunnel.

- The expansion of the Atlantic Branch of the LIRR into John F. Kennedy International Airport.

The following route requires further study:

- A Nostrand Avenue subway extension (Route 29B) southeasterly under Flatbush Avenue to Avenue U.

We disapprove of the following route:

- A New Lots line extension south from the present terminal yard to the vicinity of Flatlands Avenue (Route 31A)
- and recommend that a study be made of extension of the Canarsie-14th Street BMT line into the bed of the proposed Cross-Brooklyn and Queens Interborough Expressways.

Transit Needs and Goals

New York City's office buildings house the nerve centers of the nation's business, finance, and communications. These office buildings cluster on Manhattan below 60th Street in numbers that dwarf all the other "downtowns" of the world. The City's 160 million square feet of office space is almost double the amount in the next nine cities of the United States.

Manhattan provides jobs for 2.1 million people who must enter and leave the Central Business District every day. This means that the City's transportation system must move the equivalent of the combined populations of Baltimore, Boston and Cincinnati into and out of nine square miles every day. Two-thirds of these workers travel to and from their work by subway.

For more than 30 years, more than two million people have been employed in Manhattan, and the subway system has struggled to provide them adequate transportation since the last major construction on the system was completed in 1935. While the total number of jobs is increasing slowly in the Central Business District, the types of jobs are changing rapidly. We expect an increase of approximately 100,000 jobs in the next two decades. Only recently, the overwhelming majority of the jobs were blue collar. Now, industrial employment is being replaced by white collar office jobs.

The Manhattan Business District is the most vital, growing sector of the City's economy. More than 43 million additional square feet of office space is already in planning or under construction. The transportation system must encourage and support this growth.

An increasing number of Manhattan's white collar workers now live in the outer areas of the City and in its suburbs, particularly in areas beyond the terminals of the existing rapid transit system —

outer Brooklyn, outer Queens, Nassau and Suffolk Counties, northeast Bronx and Westchester County. Conversely, population has decreased in the inner areas of the City as have rapid transit riders from those sections coming into Manhattan.

Population and Peak Period Rapid Transit Riding

Area	Per Cent Change	
	Population (1950-1960)	Passengers Entering Stations 7-9 A.M. (1956-1966)
Inner Areas	-10	-14
Outer Areas	+27	+8
Total City	-1	-7

The result of this population shift is that the express subway routes from the growing outer areas of the City into the Business District, and the East Side of Manhattan in particular, are badly overcrowded. Most local lines serving the inner areas of the City, on the other hand, have capacity to spare. The outer areas of the City most clearly in need of increased service are the northeast Bronx and outer Queens.

The existing express subway lines into the Central Business District are overloaded by 34,000 passengers in the peak hour.

The expansion program recommended by MTA as modified in this report would provide additional capacity on new lines and would drain enough riders off presently overcrowded lines so that almost every line in the City would have adequate capacity.

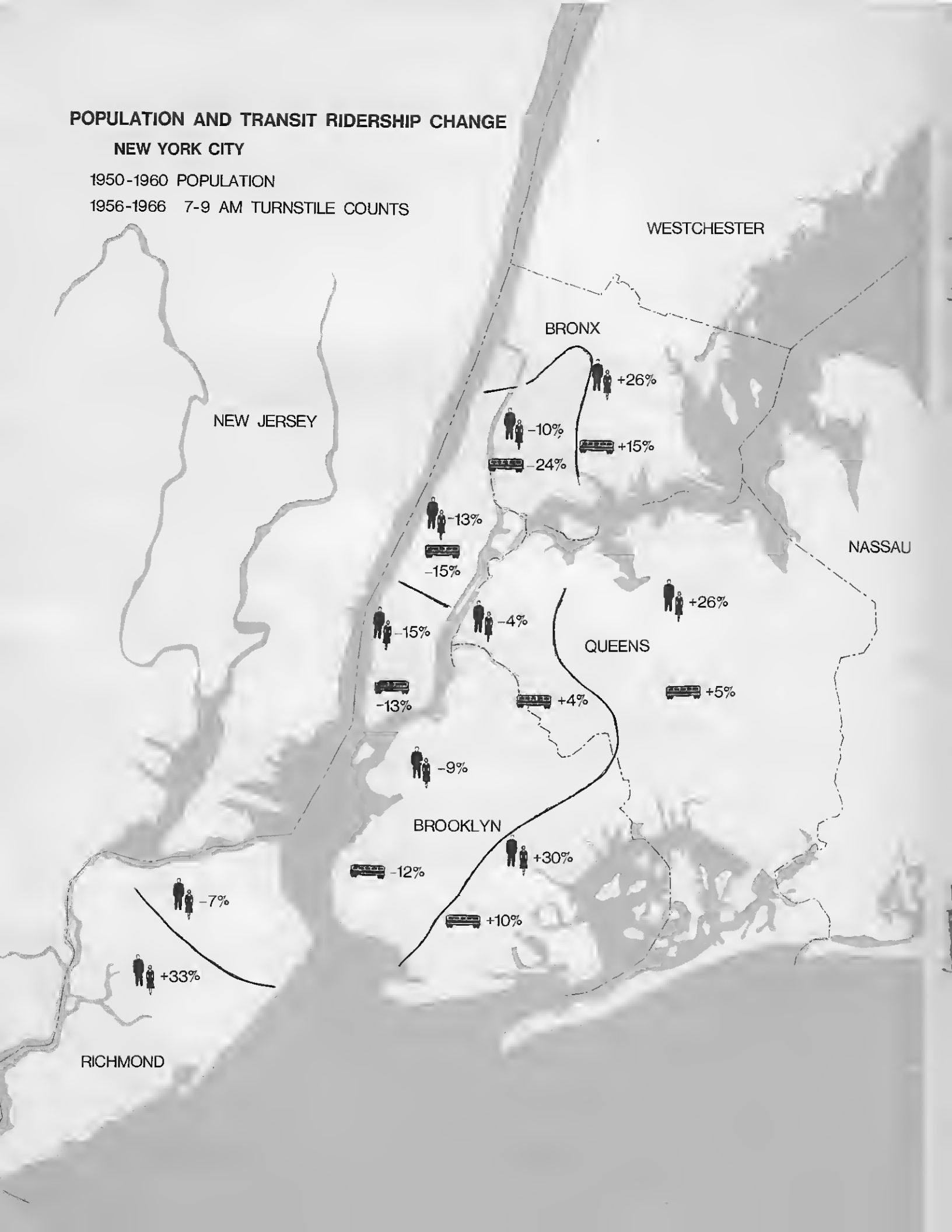
For instance on the overcrowded Lexington Avenue Subway southbound in the morning rush hours, there are now approximately 160 people

POPULATION AND TRANSIT RIDERSHIP CHANGE

NEW YORK CITY

1950-1960 POPULATION

1956-1966 7-9 AM TURNSTILE COUNTS



MANHATTAN CENTRAL BUSINESS DISTRICT
1966 Peak Hour Rapid Transit Passengers Entering by Sector
(Thousands of Passengers)

<u>Sector</u>	<u>Passenger</u>	<u>Reasonable Capacity</u>	<u>Overloads</u>	<u>Surplus</u>
Manhattan-Bronx				
West Side				
Express	82	73	9	—
Local	38	63	—	25
East Side				
Express	51	36	15	—
Local	30	30	—	—
Queens	150	140	10	—
Brooklyn	239	265	—	26
Total	<u>590</u>	<u>607</u>	<u>34</u>	<u>51</u>

jammed sardine-like into each car. When this transit expansion is completed and the new Second Avenue Subway has siphoned off approximately 25,000 riders per hour from the Lexington Avenue line, there will be only 120 passengers per car, allowing a passenger to read his newspaper in relative comfort without jabbing other riders with his elbows or reading matter.

The total excess capacity throughout the system by 1985, assuming completion of the first stage of the transit expansion program, would be 132,000 riders per hour in the peak hours.

Design and Service Standards

The standards of speed and comfort on the existing subways are not adequate. The City can no longer tolerate slow subways that are crowded and uncomfortable.

The NYCTA has relied on its own design work and a study made by the engineering firm of

Coverdale and Colpitts. The service and design standards implied in the submission to the Board of Estimate are unacceptable.

For example, not only does the NYCTA proposal call for cut-and-cover construction of the Second Avenue Subway in Manhattan, but it also calls for an average speed on this line to Dyre Avenue of only 17 miles per hour and to Pelham Bay Park of less than 20 miles per hour. Several curves planned on the line would limit the top speed to 30 miles per hour.

We feel strongly that the final design of this new system should meet at least the following standards:

- New lines and car equipment should be designed to permit an average scheduled speed of at least 30 miles per hour compared with a 20 mile per hour or lower scheduled speed on existing lines. Commuters should be able to reach Midtown destinations from outlying stations on the system within 30 minutes. Trains should be able to run

NEW JERSEY

MANHATTAN

QUEENS

BROOKLYN

RAPID TRANSIT PROPOSALS MANHATTAN

NEW YORK CITY

- NYCTA Proposed Route
- City Alternative Route
- Existing Rapid Transit
- Existing Railroad
- Proposed Reconstruction

HUDSON
RIVER

EAST
RIVER

48th STREET
CROSSTOWN

Penn Central RR

8th Ave

7th Ave

Ave of Americas

Lexington Ave

EXTENSION

Broadway

LOWER

7th Ave

Lexington

Canarsie-14th St

Broadway

42nd St Shuttle

ROUTE 131A

EAST SIDE
TERMINAL

Penn Central RR

ROUTE 132A
2nd AVENUE

63rd St

Astoria

Queens

Flushing

MANHATTAN CENTRAL BUSINESS DISTRICT

1985 Estimated Peak Hour Rapid Transit Passengers Entering by Sector

(Thousands of Passengers)

<u>Sector</u>	<u>Passengers</u>	<u>Reasonable Capacity</u>	<u>Overloads</u>	<u>Surplus</u>
Manhattan-Bronx				
West Side				
Express	72	84	—	12
Local	41	84	—	43
East Side				
Express	70	84	—	14
Local	22	36	—	14
Queens	177	190	—	13
Brooklyn	229	265	—	36
Total	<u>611</u>	<u>743</u>	—	<u>132</u>

up to 80 miles per hour as claimed in the MTA's February 1968 document titled "Metropolitan Transportation — A Program for Action." Careful attention must be paid to alignment, grades and track work.

- Stations should be spaced as far apart as possible, consistent with convenient access and coordination with surface transportation. This is particularly important for the Second Avenue Subway, where a primary purpose is rapid access from the outer sections of the Bronx and Queens. Stations must be attractively designed, functional, and, wherever possible, connected to new office buildings or other major facilities to improve pedestrian circulation. Signs throughout the system must be comprehensible and attractive.

- Noise levels inside and outside the cars must be considerably below the levels on the existing system. Passengers must be comfortable.

Cost and Financing

The NYCTA estimates the total cost of its eight-project package at \$957 million. These figures are "order of magnitude" estimates and cannot be accurately estimated until further design work is done. The changes in the NYCTA proposal recommended in this report are not expected to alter significantly the total estimated cost of the expansion package.

These estimates do not take into account the inevitable escalation of costs — on the order of one-third — that will occur before construction is completed. Further, at least part of the second phase of the expansion program should begin in less than the projected 10 years. The need is particularly pressing for start of construction of a crosstown link on 48th Street and the southerly extension of the Second Avenue Subway below 34th Street in Manhattan.

State transportation bond issue funds totaling \$600 million are expected to be available to meet part of the cost of the first stage of the transit program. The City will provide \$200 million in matching funds through its capital budget. The remaining cost of the first stage of the transit program — estimated at about \$500 million — will have to be provided by additional appropriations of Federal, State or City funds.

Substantial Federal funds are essential if this construction program is to proceed on any reasonable schedule. Even though it is uncertain whether these funds will be available from the Federal government, we strongly recommend that the City press forward with the design of the recommended facilities.

To reduce costs wherever possible, new rapid transit lines must utilize space in existing railroad and expressway rights-of-way outside of Manhattan.

Additional trackage can be provided alongside existing tracks or in highway center malls with minimum disruption and cost.

An increase in the NYCTA's operating deficit will inevitably result from the expansion and improvement of the system. The new routes will serve largely to improve the quality of service to present rapid transit users rather than to generate new rapid transit commuters; they will bring about a relatively small increase in total ridership. Crowding and travel time will be reduced, but the bulk of the operating costs of the new lines will not be covered by revenues received from new passengers.

The City cannot tolerate the current standards of service. Substantial new monies must, therefore, be raised — hopefully from Federal funds, State subsidies or surpluses of the Triborough Bridge and Tunnel Authority.

The Bronx and Manhattan

The Problem

The Lexington Avenue line, which provides the only subway service on the East Side of Manhattan and a major portion of the service to the Bronx, is the most overcrowded and uncomfortable line in the City system. The express handles 51,000 riders per hour during peak hours, 42 per cent above an acceptable standard of comfort.

Lexington Avenue Subway Existing Peak Hour Loads and Capacities Crossing 64th Street Southbound			
	Express	Local	Total
Passengers	51,000	30,000	81,000
Comfortable Capacity	36,000	30,000	66,000
Overload	15,000	—	15,000

The northeast Bronx has been one of the population growth sections of the City, and this trend will be accelerated over the next few years as the anticipated 55,000 residents of Co-op City move into their new homes.

The service from the northeast regions of the Bronx is too slow for today's commuter. Scheduled time from the Dyre Avenue station of the IRT line to Herald Square is 51 minutes, which means the average commuter's door-to-door time exceeds one hour.

While the IRT and IND lines running north-south on the West Side of Manhattan are crowded beyond an acceptable comfort level, this overcrowding is much less severe than on the Lexington Avenue line.

The NYCTA Proposal

The NYCTA has proposed:

- A new Second Avenue Subway (Route 132A)

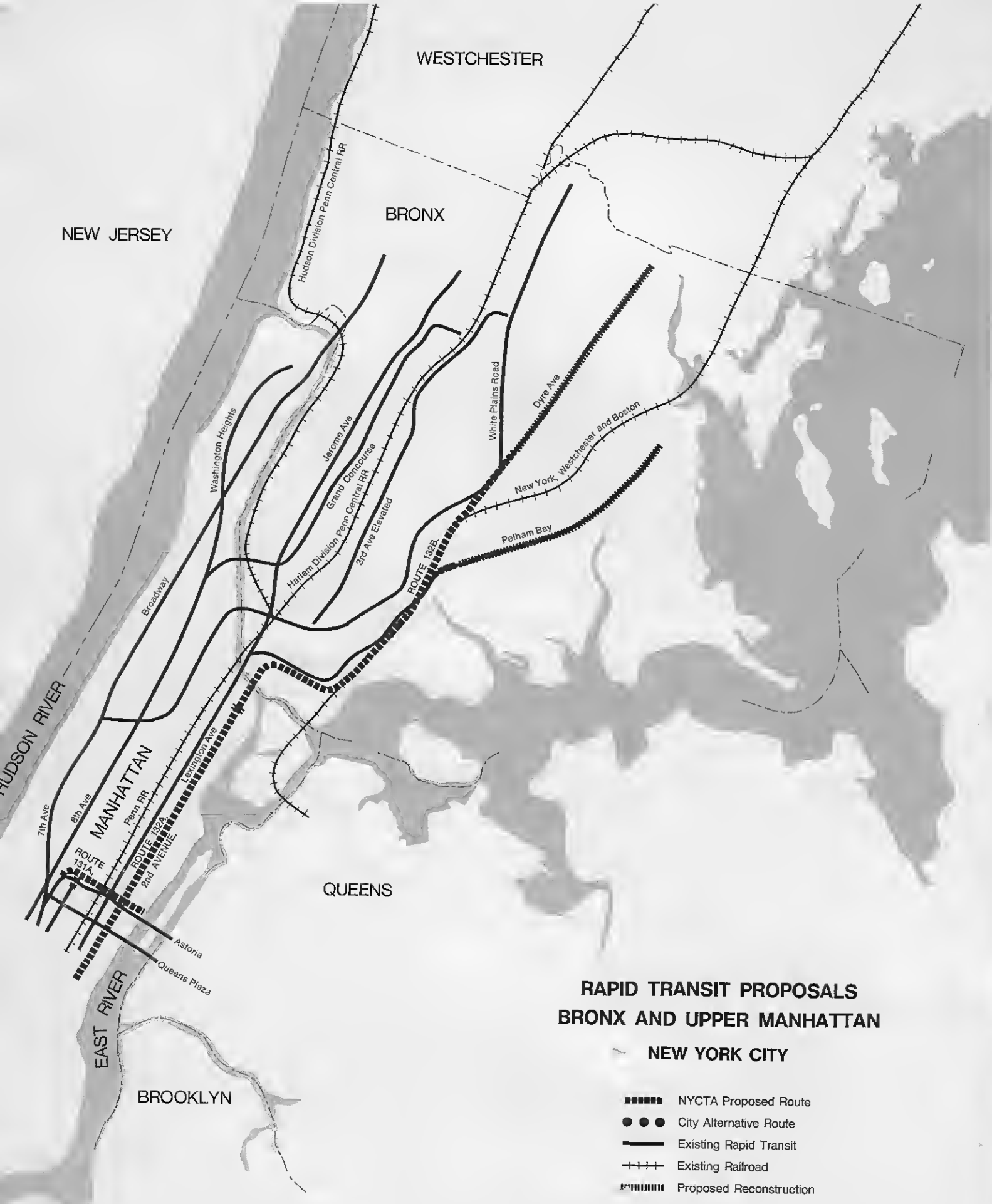
extending from the Harlem River south to a temporary midtown terminus at 34th Street. Service to the West Side would be provided by a spur under 63rd Street and Central Park, connecting with the existing Broadway BMT line at 57th Street. The NYCTA wants to build the Second Avenue Subway largely by the conventional cut-and-cover method with provision for four tracks to provide both express and local service.

- A Second Avenue Extension to Dyre Avenue (Route 132B) in the Bronx, following the abandoned roadbed of the defunct New York, Westchester, and Boston Railway, to provide a high-speed by-pass to growing areas of the outer Bronx. Trains from the Dyre Avenue and Pelham lines in the upper Bronx would be diverted to this new express line, and passengers from the upper portion of the White Plains Road line would be able to transfer to this new service simply by crossing the platform at the East 180th Street station.

Proposed Modifications

We propose that the Second Avenue Subway be a two-track high-speed line. Two tracks will provide more than the capacity that is needed.

We strongly oppose the cut-and-cover method of constructing the new Second Avenue Subway, the largest single item in the transit expansion package. This line should, if feasible, be built in a tunnel drilled through the bedrock of Manhattan, a process which would eliminate the havoc resulting from opening up Second Avenue for several years. This would seriously impair the avenue's progress as a residential, commercial and entertainment street. Furthermore, it is a major vehicular artery carrying 30,000 trucks and cars daily and would have to be virtually shut down for the duration of construction. The resulting bottleneck for vehicles and pedestrians would make the recent disruption



**RAPID TRANSIT PROPOSALS
BRONX AND UPPER MANHATTAN**

NEW YORK CITY

- NYCTA Proposed Route
- City Alternative Route
- Existing Rapid Transit
- + + + Existing Railroad
- ▨▨▨▨▨ Proposed Reconstruction

Manhattan East Side Subways
1985 Peak Hour Loads and Capacities Southbound at 64th Street

	<u>Lexington Avenue</u>		<u>Second Avenue</u>	
	<u>Express</u>	<u>Local</u>	<u>Subway</u>	<u>Total</u>
Passengers	34,000	22,000	36,000	92,000
Comfortable Capacity	36,000	36,000	48,000	120,000
Reserve Capacity	2,000	14,000	12,000	28,000

along Avenue of the Americas for construction of the IND subway extension seem like a pot-hole repair.

Technological advances in deep-rock tunneling make it highly conceivable that refinements, such as the mechanical mole, could reduce the cost and time by 30 to 40 per cent. A deep tunnel also will eliminate the need for the expensive relocation of utilities now in the bed of Second Avenue.

The deep-rock tunnel would eliminate the incalculable costs to local merchants and residents of chopping up Second Avenue as well as the wear and tear this would inflict on the already frazzled nerves of the City's motorists.

Benefits of the Program

A two-track Second Avenue Subway designed to modern standards will serve the projected needs of the Bronx and the East Side besides reducing the over-crowding on the Lexington Avenue line to reasonable levels.

The following chart giving projected peak hour loads in 1985 shows that the two-track subway we favor would leave even more excess capacity on the Lexington Avenue local than now exists. It also shows that overcrowding on the Lexington Avenue express line would be eliminated and that the combined reserve capacity on the two lines would be 28,000 riders per hour.

Construction of two additional tracks to provide local service simply cannot be justified. It would be far better to start construction of a 48th Street

crosstown link and a southerly extension of the Second Avenue line.

The realization of this long-sought extension of rapid transit service in the Bronx-Manhattan sector will alleviate present conditions on the Lexington Avenue line and provide reserve capacity on the system serving these areas. Our analysis of projected peak hour passengers heading south on the Second Avenue Subway as they cross 64th Street reveals that half would have been riding the Pelham Bay line of the IRT if no new subway had been built. An additional 12,500 would have ridden the Lexington, Dyre Avenue and White Plains Road lines, all of which use the existing Lexington Avenue tracks. The new subway would get most of its other riders from Co-op City, which will be fully populated by the time the Second Avenue line is opened.

The New York City Transit Authority proposal does not indicate the spacing of stations on the Second Avenue line. We believe they should be at intermediate intervals (further apart than the stops on the Lexington Avenue local, closer together than stops on the Lexington express) to combine the speed of an express and the convenience of a local. High speed trains could make four stops between midtown and the Harlem River and still achieve the same overall speed as the existing Lexington Avenue expresses. Deep stations with escalators at either end would, in effect, extend four blocks apiece and be within easy walking distance of twice as many people as existing two-block-long stations.

**Second Avenue Subway
Estimated 1985 Peak Hour Passengers
Southbound at 64th Street**

Diverted from Lexington Avenue in Manhattan	5,500
Diverted from Pelham Bay Line	18,000
Diverted from Dyre Avenue Line	3,000
Diverted from White Plains Road Line	4,000
New riders (Principally Co-op City)	5,500
Total	36,000

A major flaw in the NYCTA proposal, however, is the absence of provision for adequate crosstown circulation. We favor construction of a 48th Street crosstown link in the first phase of the transit expansion to fill this gap. This crosstown link is actually the cornerstone of the entire expansion plan; without it, the plan loses much of its potential effectiveness.

The other new subways and extensions are designed primarily to bring residents from outer areas of the City into the Manhattan Business District. These riders must be able to reach destinations all over the City. The 48th Street crosstown would:

- Provide a wider range of convenient destinations, particularly near the West Side office centers, for passengers who use the Second Avenue Subway and Long Island Rail Road.
- Provide badly needed crosstown circulation for all those working in this area.
- Promote the desirable redevelopment of the midtown area west of Eighth Avenue, an area presently ripe for change but unserved by rapid transit.

The Chairman of the Metropolitan Transportation Authority said three months ago he was submitting a request for immediate funds from the State Office for Transportation for a feasibility study of a 48th Street crosstown link. We urge that this essential element be made a high priority project as soon as a feasible plan is developed.

New Service for Lower Manhattan

While funds are not now available to extend the Second Avenue Subway below 34th Street, the State Legislature has authorized the planning of this line as far south as 14th Street. We suggest that these studies for this southward extension be made at least as far south as Canal Street so that connections can be made between the Second Avenue line and existing routes to provide direct service to Brooklyn and Lower Manhattan.

Lower Bronx IRT Connections

With the planned diversion of the IRT riders from the northeast Bronx into the Second Avenue Subway, improved connections between existing lines should be made near 138th and 149th Streets in the Bronx to permit routings of Lexington Avenue local trains onto the White Plains Road and Jerome Avenue lines.

Rejected Alternatives

There is some local demand for construction of a new East Side subway under First Avenue rather than Second Avenue. A superficial glance at this suggestion might lead one to believe that this alignment would provide necessary service for the institutions and residents east of First Avenue and on the Lower East Side.

There are, however, several compelling reasons which argue for the long-planned Second Avenue route:

- Most East Side subway riders from the Bronx, Queens and Manhattan will be heading for destinations in the Midtown Business District. A First Avenue Subway would require virtually all of these workers and shoppers to walk westward an extra long block to reach their destinations.
- There are more Manhattan residents who will use the new subway west of the midpoint between First and Second Avenue than east of that line.
- It would be extremely difficult and costly to interconnect the proposed 63rd Street tunnel and a First Avenue Subway because of lack of space to make the necessary transitions between the routes.

Queens

The Problem

Outer Queens, the fastest growing section of the City during the past decade, now relies for rapid transit access to Manhattan on the heavily overloaded Queens Boulevard and Flushing lines. Projected continued growth during the next two decades will exacerbate this situation, particularly in easternmost areas where a long bus ride is required to reach the subway.

The NYCTA Proposal

The NYCTA has recommended:

- Construction of a two-track interconnection of the proposed 63rd Street tunnel with the Queens IND Line along 41st Avenue and Northern Boulevard plus necessary connections in Manhattan (Route 131A).

- A one-track high-speed IND by-pass route on the Long Island Rail Road right-of-way between Queens Plaza and 67th Avenue in Rego Park (Route 131B).

We support the general alignment of Routes 131A and 131B but feel it is essential they be connected in the vicinity of Sunnyside Yards to permit maximum route flexibility among both Queens lines and the 53rd and 63rd Street tunnels.

- A two-track line from the vicinity of the IND Woodhaven Station to Kissena Boulevard within or below the right-of-way of the Long Island Expressway (Route 131C).

Joint construction of the line with the Expressway expansion is the clearly preferable alternative, if it proves feasible, because it would reduce

construction costs. If it is not feasible, we then favor consideration of an alternate tunnel route along Jewel Avenue, which has been suggested by the Regional Plan Association. The extension beyond Kissena Boulevard is necessary to justify the cost of this line.

- A two-track line from the vicinity of the IND Van Wyck Boulevard station to Springfield Boulevard along the rights-of-way of the Van Wyck Expressway, Long Island Rail Road Mainline and the Long Island Rail Road Atlantic Branch.

The growth of the Jamaica business district is dependent on the coordination of mass transit with new development in the area. York College and new commercial and office space would be spurred by removal of the Jamaica El in the business district and relocation of mass transit to the existing LIRR Mainline right-of-way.

Thus, we recommend connecting the elevated and the new southeast Queens line at the Van Wyck Expressway in the first stage of the expansion and eliminating service on the BMT elevated line east of the LIRR Mainline.

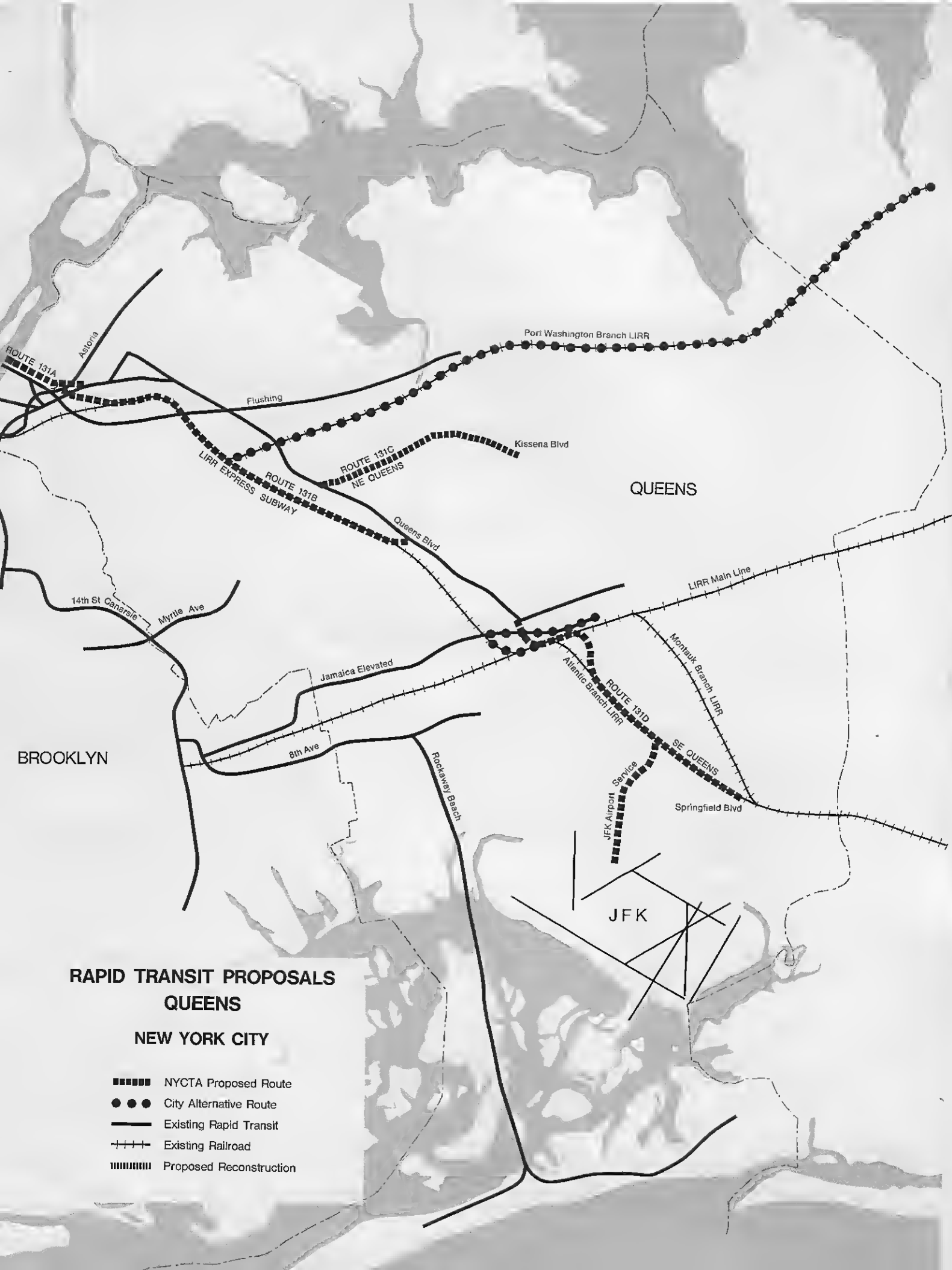
The final choice of the alternates proposed for routing in the Jamaica Business District-York College area should be made after further study by the City, the NYCTA and the City University. Maximum access to this redevelopment area is the goal, but the specifics require further study.

The Benefits of the Program

The effect of the first stage of the transit expansion program will be a dramatic improvement in

1966 Peak Hour Loadings on Queens Subways Entering Manhattan

	IRT Flushing	IND Queens Blvd	BMT Queens Lines	Total
Comfortable capacity	46,000	5,000	44,000	140,000
Loading	52,000	59,000	39,000	150,000
Overcrowding	6,000	9,000	—	15,000
Reserve Capacity	—	—	5,000	5,000



Estimated 1985 Peak Hour Loadings on Queens Subways Entering Manhattan

	IRT Flushing	IND Queens Blvd.	BMT Queens Lines	New Service	Total
Comfortable capacity	46,000	48,000	48,000	48,000	186,000
Loading	50,000	44,000	35,000	48,000	177,000
Overcrowding	4,000	—	—	—	4,000
Reserve capacity	—	4,000	13,000	—	17,000

subway service to the most underserved areas of Queens. It will accommodate comfortably 48,000 additional peak hour riders. The 17,000 who now overload the Queens Boulevard and Flushing lines will be served along with 23,000 new riders expected by 1985. Only the Flushing line will still be overcrowded. Relief for this line can be achieved by running in-city service on the existing Port Washington Branch Line of the LIRR which has excess capacity.

If adequate standards are achieved, the average time from Avenue of the Americas and 34th Street to Queens Boulevard and 179th Street can be reduced from 43 to 27 minutes.

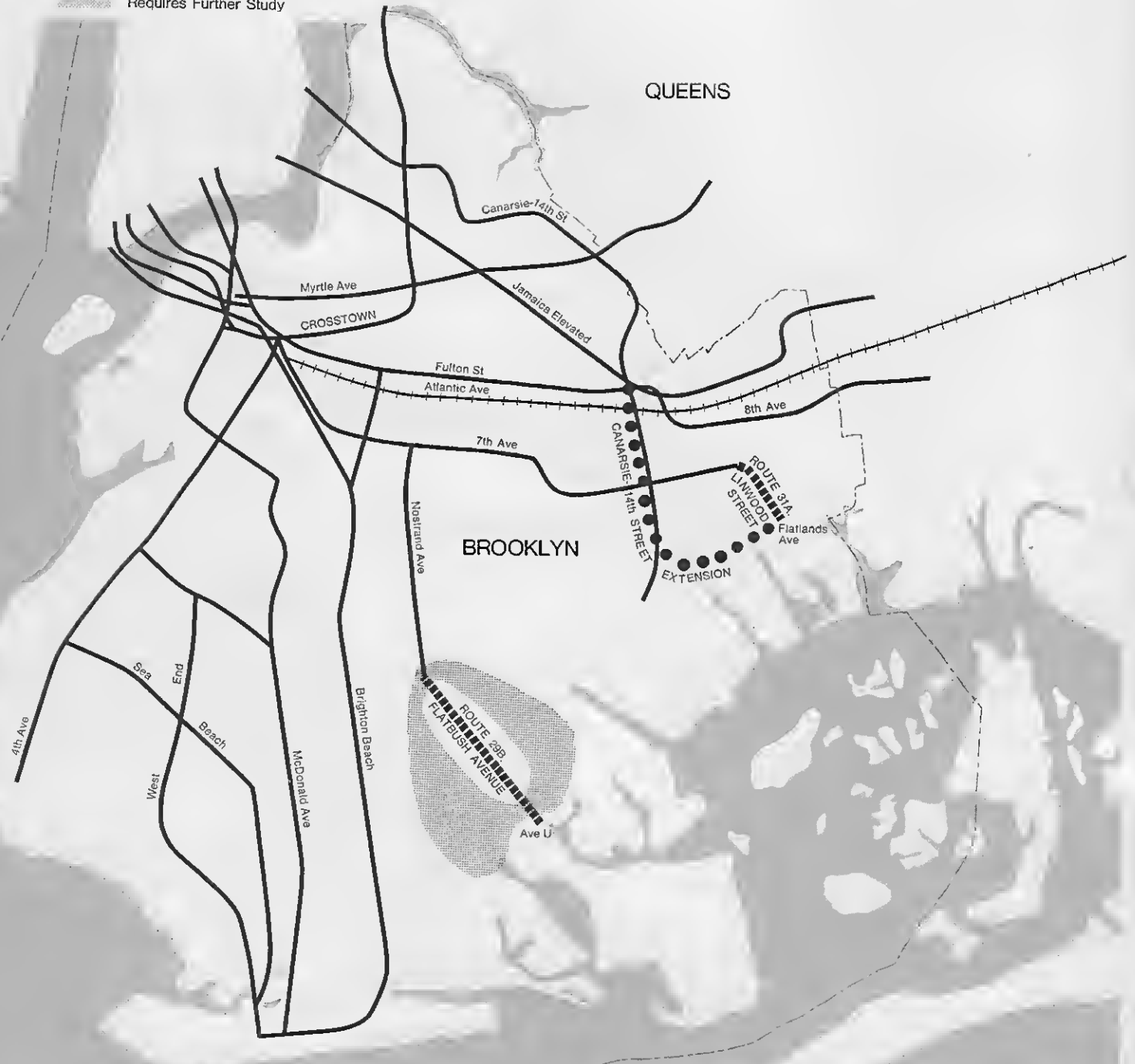
Rejected Alternative

It has been previously proposed by various groups

that the new northeast Queens extension be built via Northern Boulevard through Flushing and along Kissena Boulevard. This route, however, would be unduly circuitous and would involve unnecessarily long travel time between outer Queens and Manhattan. The line would require about seven miles of costly new subway construction through the central Queens area west of Flushing. This area will not require additional local service since the northeast Queens route will divert enough riders to free up additional capacity on the parallel Flushing IRT line. The proposed Northeast extension along the Long Island Expressway, plus additional in-City service on the Port Washington Branch of the LIRR will provide better service to northeast Queens for considerably less money.

RAPID TRANSIT PROPOSALS BROOKLYN NEW YORK CITY

- NYCTA Proposed Route
- City Alternative Route
- Existing Rapid Transit
- Existing Railroad
- ||||| Proposed Reconstruction
- ▨ Requires Further Study



Brooklyn

The Problem

The outer areas of the borough have grown in population since completion of the existing subway lines serving the inner and intermediate areas. Service must be provided for these outlying areas as well as for the Spring Creek area, which will see extensive residential, commercial and institutional development in the next few years.

The NYCTA Proposal

To meet these needs, the NYCTA has proposed construction of:

- A Nostrand Avenue subway extension (Route 29B) southeasterly under Flatbush Avenue to Avenue U to serve an area of potential growth and to provide transfer facilities to riders traveling to and from the Rockaways.
- A New Lots line extension south from the present terminal yard to the vicinity of Flatlands Avenue to serve the Spring Creek development area.

Proposed Modifications

Because of the testimony of many area residents concerning the Nostrand Avenue line extension

at the July 31 public hearing of the City Planning Commission, we are not prepared to make a recommendation at this time. We will submit our recommendation prior to the Board of Estimate hearing on this matter.

We recommend that another alternative for improved transit access in the Spring Creek area be considered — relocation of the Canarsie-14th Street BMT elevated line through East New York into the bed of the proposed Cross Brooklyn and Queens Interborough Expressways; this line could be extended either eastward into the Spring Creek area or westward through the proposed Linear City development.

Rejected Alternatives

It has been proposed in the past that the transit needs of southeast Brooklyn be met by two major north-south subway extensions along Nostrand and Utica Avenues. These lines would be roughly parallel to each other, only slightly more than a mile apart, and would require an investment approaching \$200 million. It is too expensive to build both lines.

RAPID TRANSIT PROPOSALS
RICHMOND
NEW YORK CITY

- NYCTA Proposed Route
- City Alternative Route
- Existing Rapid Transit
- Existing Railroad
- Proposed Reconstruction



Staten Island

Rapid transit improvements proposed by the MTA for Staten Island have not been included in the submission now before the City because the Staten Island Rapid Transit (SIRT) is not under the jurisdiction of the NYCTA.

It is important to note, however, that the City Administration and the MTA have agreed in principle on a broad modernization program for the

SIRT, which will be financed by funds from the State bond issue and City capital budget.

This program envisions the purchase of 50 to 80 high-speed air conditioned cars for the SIRT as well as rehabilitation of the railroad line and stations to provide fast, comfortable service between St. George and Tottenville.

Suburban Transit

In addition to rapid transit improvements, the MTA has also submitted its plans for two key LIRR extensions within the City.

The proposed LIRR extension to Manhattan's East Side will pass under the East River in the new 63rd Street tunnel. Connections will be provided in Queens to the LIRR Mainline near the Sunnyside Yards.

In Manhattan, a new line will be extended south under Third Avenue to a new metropolitan transportation center in the vicinity of 48th Street. This extension must not be built by the cut-and-cover method for the same reasons given in our discussion of the Second Avenue Subway in Manhattan. This new extension will provide vitally needed access for the LIRR to the burgeoning east midtown area. It will also serve as a terminus for new services connecting John F. Kennedy International Airport with Manhattan.

In Queens, it is proposed to build another extension from the Atlantic Branch of the LIRR through southeastern Queens into Kennedy Airport.

This rail link to Kennedy is absolutely essential to alleviate the monumental ground congestion which plagues the airport. The airport plays a vital role in the City's transportation system and economy; it cannot be allowed to strangle. We support the proposed route in the vicinity of Baisley Park on the condition that a satisfactory design and alignment protects the park and the residential environment of this fine area. This vital line should, if feasible, be below grade.

The MTA, besides these extensions, is programming major improvements to existing LIRR, New York, New Haven and Hartford and Penn Central commuter lines in the New York area.

Unfortunately, no immediate improvements are scheduled for trans-Hudson rail commuter service between New York City and the fast-growing residential areas of Northern New Jersey and Rockland County in New York State. We recommend that immediate attention be given this problem by the various governments and regional agencies involved.